## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

 (Currently Amended) A method for increasing throughput over network connections experiencing data loss due to non-congestion-based packet loss, comprising: identifying, at a network node, non-congestion-based packet loss over a

sending a loss notification signal from the network node to the sending module in response to identification of the non-congestion-based packet loss;

network connection between a sending module and the network node;

verifying the non-congestion-based packet loss at the sending module independently of the receipt of loss notification signals; and

performing a first loss recovery procedure, different from a second loss recovery procedure associated with congestion-based packet loss, if the non-congestion-based packet loss is verified at the sending module.

- 2. (Original) The method of Claim 1, wherein the non-congestion-related packet loss comprises packet loss due to bit errors (PLB).
- 3. (Original) The method of Claim 1, wherein sending a loss notification from the network node comprises embedding data associated with the packet experiencing packet loss into a signaling protocol packet, and sending the signaling protocol packet as the loss notification to the sending module.
- 4. (Original) The method of Claim 3, wherein sending the signaling protocol packet to the sending module further comprises embedding the signaling protocol packet into the payload of a network layer packet, and sending the signaling protocol packet to the sending module via the network layer packet

5. (Original) The method of Claim 4, wherein verifying the non-congestion-based packet loss comprises:

forwarding the signaling protocol packet from a network layer of the sending module to a signaling protocol layer of the sending module;

identifying a transport layer protocol in a next header field within the data embedded in the signaling protocol packet;

informing the identified transport layer protocol of the non-congestionbased packet loss; and

verifying the non-congestion-based packet loss via the identified transport layer protocol.

6. (Original) The method of Claim 5, wherein verifying the non-congestion-based packet loss via the identified transport layer protocol comprises:

marking the packet experiencing non-congestion-based packet loss to indicate that the loss notification signal was received from the network node for the packet; and

enabling the performance of the first loss recovery procedure in response to receipt of a predetermined number of duplicate acknowledge packets from the network node for the marked packet.

- 7. (Original) The method of Claim 5, further comprising dropping the signaling protocol packet if the transport layer protocol in the next header field is not among a predetermined group of transport layer protocols.
- 8. (Original) The method of Claim 5, wherein the transport layer protocol comprises any one of TCP, UDP, and TFRC.
- 9. (Original) The method of Claim 4, wherein the network layer packet comprises an Internet Protocol (IP) packet.

- 10. (Original) The method of Claim 4, wherein the network layer packet comprises a protocol field identifying a protocol of the signaling protocol packet.
- 11. (Original) The method of Claim 3, wherein embedding data associated with the packet experiencing non-congestion-based packet loss comprises copying as many bytes from the packet experiencing non-congestion-based packet loss as can fit into the signaling protocol packet within the network layer packet.
- 12. (Original) The method of Claim 3, wherein the signaling protocol packet comprises a next header field identifying a transport layer protocol of the sending module.
- 13. (Original) The method of Claim 1, wherein verifying the non-congestion-based packet loss at the sending module comprises:

marking the packet experiencing non-congestion-based packet loss to indicate that the loss notification signal was received from the network node for the packet; and

enabling the performance of the first loss recovery procedure in response to receipt of a predetermined number of duplicate acknowledge packets from the network node for the marked packet.

- 14. (Original) The method of Claim 13, further comprising continuing normal communication at the sending module during a time required to receive the predetermined number of duplicate acknowledge packets.
- 15. (Original) The method of Claim 1, wherein performing the first loss recovery procedure comprises:

sending the packet experiencing packet loss;

setting a slow start threshold equal to a number of packets in flight;

until the packet experiencing packet loss is acknowledged, incrementing a congestion window for each duplicate acknowledge received; and

setting the congestion window equal to the slow start threshold when the packet experiencing packet loss is acknowledged.

- 16. (Currently Amended) The method of Claim 1, wherein the second loss recovery procedure comprises a standard <u>Transmission Control Protocol (TCP)</u> congestion response procedure.
- 17. (Original) The method of Claim 1, wherein identifying non-congestion-related packet loss comprises distinguishing between congestion-related packet loss and non-congestion-related packet loss over the network connection.
- 18. (Original) The method of Claim 1, wherein identifying non-congestion-related packet loss comprises identifying bit errors associated with a packet transmitted to the network node using checksum information provided to the network node via the packet.
- 19. (Original) The method of Claim 1, wherein the network connection comprises at least one of a wireless link and a wired link.
- 20. (Original) A communication device for communicating information over a network, comprising:

a receiver for receiving indications of packet loss due to bit errors (PLB) pertaining to one or more packets previously transmitted via the communication device;

a packet marking module coupled to receive the PLB indications and to mark the respective previously-transmitted packets as potentially subject to PLB;

a verification module coupled to receive a packet loss indication and coupled to the packet marking module to determine whether the packet loss indication corresponds to any of the previously-transmitted packets that have been marked; and

a non-congestion-based loss recovery module coupled to the verification module to perform packet loss recovery without requiring reduction of a congestion window for the previously-transmitted packets that are both associated with the packet loss indication and have been marked.

21. (Original) The communication device as in Claim 20, further comprising a congestion-based loss recovery module coupled to the verification module to perform a

second packet loss recovery that includes a reduction of the congestion window for the previously-transmitted packets that are associated with the packet loss indication and that have not been marked.

- 22. (Original) The communication device as in Claim 20, wherein the packet loss indication comprises at least one duplicate acknowledge (DUPACK) received from the network for a particular previously-transmitted packet.
- 23. (Original) The communication device as in Claim 20, wherein the packet loss indication comprises a predetermined number of duplicate acknowledges (DUPACKs) received from the network for a particular previously-transmitted packet.
- 24. (Original) The communication device as in Claim 23, further comprising a counter module coupled to the receiver to count the DUPACKs received from the network for the particular previously-transmitted packet.
- 25. (Original) The communication device as in Claim 20, wherein the packet loss indication comprises a packet acknowledge timeout notification.
- 26. (Original) The communication device as in Claim 20, further comprising a signaling protocol module coupled to receive the PLB indication, extract embedded information from the PLB indications, and to identify a next header indication in embedded information to notify a transport layer identified by the next header indication of the potential PLB.
- 27. (Original) The communication device as in Claim 26, wherein the signaling protocol module is coupled to the packet marking module at the transport layer via an application programming interface (API).

- 28. (Original) The communication device as in Claim 20, wherein the communication device comprises a mobile device capable of wireless communication via a wireless network.
- 29. (Original) The communication device as in Claim 20, wherein the communication device comprises a device coupled to communicate via a landline network.
- 30. (Original) A system for increasing throughput over network connections experiencing data loss due to non-congestion-based packet loss, comprising:
  - (a) a network element coupled to a network comprising:
    - (i) a receiver to receive packets transmitted via the network; and
  - (ii) a transmitter to transmit a loss notification signal to sources of the packets experiencing the non-congestion-based packet loss; and
- (b) a communication device coupled to the network element via the network, the communication device comprising:
  - (i) a receiver to receive the loss notification signal from the network element where the communication device is at least one of the sources of the packet experiencing the non-congestion-based packet loss;
  - (ii) a packet marking module coupled to receive at least a portion of the loss notification signal and to mark the packet as potentially subject to non-congestion-based packet loss;
  - (iii) a verification module coupled to receive a packet loss indication and coupled to the packet marking module to determine whether the packet loss indication corresponds to any packet that have been marked; and
  - (iv) a non-congestion-based loss recovery module coupled to the verification module to perform packet loss recovery without requiring reduction of a congestion window for the packets that are both associated with the packet loss indication and have been marked.

- 31. (Original) The system as in Claim 30, wherein the network element further comprises an embedding module to embed packet header data into the loss notification signal from packets experiencing non-congestion-based packet loss.
- 32. (Original) The system as in Claim 31, wherein the communication device comprises an extraction module to extract a next header from the embedded packet header data to identify a protocol layer to be notified of the non-congestion-based packet loss.
- 33. (Original) The system as in Claim 30, wherein the communication device further comprises a congestion-based loss recovery module coupled to the verification module to perform a second packet loss recovery that includes a reduction of the congestion window for the packets that are associated with the packet loss indication and that have not been marked.